Group ID: H
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CHECK LIST

Continuing Data Disclaimer Rule 47 PCT

No Yes No Yes

CPA tag Microfiche Appendix

No No

Foreign Priority Claimed: No

Acknowledged: No

State Code: CA Country Code:

Text Endorsement: 09756617.010301

JACKET

GAU SERIAL NUMBER FILING DATE CLASS SUBCLASS

2675 09/756,617 01/03/01 157 345

FOREIGN PRIORITY

Document Number Date Country

DISCLAIMER

TITLE

Providing force feedback to a user of an interface device based on interactions of a user-controlled cursor in a graphical user interface

MICROFICHE APPENDIX

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Group ID: H

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Page 2

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CLAIMS ALLOWED

<u>Total</u> <u>Print</u>

40 1

DRAWINGS

Sheets Figures Print

27 44

BLUE SLIP INFORMATION

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09/756,617 345 157 2675

INDEP. CLAIMS TOTAL CLAIMS

1,16,23,30,38,39,40 40

BLUE SLIP (Page 1)

INTERNATIONAL CLASSIFICATION

Class SubClass

G09G 5/08;5/00

CROSS-REFERENCES

Class SubClass

463 37

345 856;701;702

TERM EXTENSION

39

FIELD OF SEARCH

Class SubClass

345 156;157;161;163;169;701;702;856

Pat. No. 05975341 - 8

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Group ID: H

User ID: Rxbhavs

Page 3

463 30;36;37;38

273 . 148 B

434 45

OATH

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PCT INFO

CONTINUING DATA (Page 1)

<u>LINE CODE</u> <u>SERIAL NUMBER</u> <u>FILING DATE</u> <u>STATUS</u> <u>DOCUMENT NO.</u> <u>ISSUE DATE</u>

104 71 08/571,606 12/13/1995 01 6,219,032 / /

105 82 08/566,282 12/01/1995 01 5,734,373 / /

REFERENCES (Page 1) SERIAL NUMBER: 09/756,617

FORM 892

U.S. REFERENCES

U.S. Pat No. Date Patentee Class SubClass

Group ID: H Page 4

Pat. No. 05975341 - 8 Issue Date: 07/05/04

User ID: Rxbhavs

FOREIGN REFERENCES

Foreign Doc No. Date Country Class SubClass

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

MagicMouse: +37 Tactile and Kinesthetic Feedback In The Human-computer

Interface Using An Electromagnetically Actuated/output Device+38,

Dept of EE Univ of British Columbia (Oct. 19, 1993).

REFERENCES (Page 2) SERIAL NUMBER: 09/756,617 FORM 892

U.S. REFERENCES

	U.S. Pat No.	<u>Date</u>	Patentee	<u>Class</u>	SubClass
	5,186,629	02/1993	Rohen	340	825.19
	5,298,890	03/1994	Kanamaru et al.	345	157
	5,643,087	07/1997	Marcus et al.	273	148 B
	5,709,219	01/1998	Chen et al.	345	156
	5,710,574	01/1998	Jaaskelainen, Jr.	345	159
	5,757,358	05/1998	Osga	345	157
	5,898,599	04/1999	Massie et al.	318	628
	6,004,134	12/1999	Marcus et al.	345 .	161
		04/2000	Keyson	345	156
No issue date available.				ŧ,	

FOREIGN REFERENCES

Foreign Doc No. Date Country Class SubClass

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

REFERENCES (Page 3) SERIAL NUMBER: 09/756,617

FORM 1449

U.S. REFERENCES
U.S. Pat No. Date Patentee

Class SubClass

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Issue Date: 07/05/04 User ID: Rxbhavs

2002/0024501 02/2002 Shalit

FOREIGN REFERENCES

Foreign Doc No. Date Country Class SubClass

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

REFERENCES (Page 4) SERIAL NUMBER: 09/756,617 FORM 1449

U.S. REFERENCES U.S. Pat No.	Date	<u>Patentee</u>	Class	SubClass
5,785,630	07/1998	Bobick et al.		
5,766,016	06/1998	Sinclair et al.		
5,547,382	08/1996	Yamasaki et al.		ĸ'
5,466,213	11/1995	Hogan et al.		
5,334,027	08/1994	Wherlock		ŝ _k
5,309,140	05/1994	Everett, Jr. et al.		*
5,299,810	04/1994	Pierce et al.		
5,275,174	01/1994	Cook		
5,271,290	12/1993	Fischer		,
5,240,417	08/1993	Smithson et al.		
5,212,473	05/1993	Louis		÷
5,078,152	01/1992	Bond et al.		·
5,038,089	08/1991	Szakaly		
5,035,242	07/1991	Franklin et al.		:
5,022,407	06/1991	Horch et al.		•
5,019,761	05/1991	Kraft		
4,934,694	06/1990	McIntosh		.
4,930,770	06/1990	Baker		• •

Group ID: H Page 6 Pat. No. 05975341 - 8

User ID: Rxbhavs Issue Date: 07/05/04

:	4,891,764	01/1990	McIntosh		 " Company"	9		ا المعلق جاروسه ا	المعالية ما إلى المار	
	4,794,392	12/1988	Selinko							
	4,713,007	12/1987	Alban							
	4,708,656	11/1987	de Vries et	al.						
	4,599,070	07/1986	Hladky et a	1.						
	4,581,491	04/1986	Boothroyd							
	4,513,235	04/1985	Acklam et a	1.		4				
	4,236,325	12/1980	Hall et al.				•	100 11		· #/ 40
	4,160,508	07/1979	Frosch et a	1.						
	3,911,416	10/1975	Feder		•		,			
	3,903,614	09/1975	Diamond et a	al.		,				
	3,902,687	09/1975	Hightower			è,				
	3,623,064	11/1971	Kagan			7		i		
	3,517,446	06/1970	Corlyon et a	al.						
	3,497,668	02/1970	Hirsch							
	3,220,121	11/1965	Cutler		•		ŗ			•

FOREIGN REFERENCES

SubClass Country Class Foreign Doc No. <u>Date</u>

0 349 086 A1

3,157,853

01/1990

11/1964 Hirsch

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

REFERENCES (Page 5) SERIAL NUMBER: 09/756,617 FORM 1449

U.S. REFERENCES

SubClass U.S. Pat No. Patentee Class Date

FOREIGN REFERENCES

Page 7

Pat. No. 05975341 - 8 Issue Date: 07/05/04 Group ID: H .
User ID: Rxbhavs

Foreign Doc No. Date Country Class SubClass

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Baigrie, +37 Electric Control Loading+13 A Low Cost, High Performance

Alternative, +38 +0 +i Proceedings of Interservice/Industry Training

Systems Conference+1 , pp. 247-254, Nov. 6-8, 1990.

Iwata, +37 Pen-based Haptic Virtual Environment,+38 +0
0-7803-1363-1/93 IEEE, pp. 287-292, 1993.

Russo, +37 The Design and Implementation of a Three Degree of Freedom Force Output Joystick, +38 +0 +i MIT Libraries Archives+l +0 pp. 1-131, May 1990, archived Aug. 14, 1990.

Brooks et al., +37 Hand Controllers for Teleoperation+13 A

State-of-the-Art Technology Survey and Evaluation, +38 +0 +i JPL

Publication 85-11+1 , NASA-CR-175890; N85-28559, pp. 1-84, Mar. 1,

1985.

Jones et al., +37 A perceptual analysis of stiffness,+38 +0 ISSN 0014-4819 Springer International (Springer-Verlag); +i Experimental Brain Research+1 , vol. 79, No. 1, pp. 150-156, 1990.

Burdea et al., +37 Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation, +38 +0 +i 1993 IEEE International Conference On Robotics and Automation+1 , pp. 25-44, May 2, 1993.

Snow et al., +37 Model-X Force-Reflecting-Hand-Controller, +38 +0 NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of

Group ID: H
User ID: Rxbhavs

attachments, Jun. 15, 1989.

Ouh-Young, +37 Force Display in Molecular Docking, +38 +0 Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990.

Tadros, +37 Control System Design for a Three Degree of Freedom

Virtual Environment Simulator Using Motor/Brake Pair Actuators, +38 +0

+i MIT Archive+l , pp. 1-88, Feb. 1990, archived Aug. 13, 1990.

Caldwell et al., +37 Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System, +38 +0 1050-4729/93, pp. 955-960, 1993.

Adelstein et al., +37 Design and Implementation of a Force Reflecting Manipulandum for Manual Control research, +38 +0 DSC-+0 vol. 42, +i Advances in Robotics+l , pp. 1-12, 1992.

Gotow et al., +37 Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback, +38 +0 WA11-11:00, pp. 332-337.

Stanley et al., +37 Computer Simulation of Interacting Dynamic

Mechanical Systems Using Distributed Memory Parallel Processors, +38 +0

DSC-vol. 42, +i Advances in Robotics+l , pp. 56-61, ASME 1992;

Russo, +37 Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices, +38 +0 DSC-vol. 42, +i Advances in Robotics+l , pp. 63-70, ASME 1992.

Group ID: H
User ID: Rxbhavs

Kontarinis et al., +37 Display of High-Frequency Tactile Information. The results of the Teleoperators, +38 +0 +i Telemanipulator Technology and Space

Telerobotics+1, Won S. Kim, Editor, Proc. SPIE vol. 2057, pp. 40-50,

Sep. 7-9, 1993.

Patrick et al., +37 Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments, +38 +0 +i Cooperative Intelligent Robotics in Space+1, Rui J. deFigueiredo et al, Editor, Proc. SPIE vol. 1387, pp. 215-222, 1990.

Adelstein, +37 A Virtual Environment System For The Study of Human Arm Tremor, +38 +0 +i Ph.D. Dissertation+l , Dept. of Mechanical Engineering, MIT, Jun. 1989, archived Mar. 13, 1990.

Bejczy, +37 Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation, +38 +0 +i Science+l , vol. 208, No. 4450, pp. 1327-1335, 1980.

Bejczy et al., +37 Generalization of Bilateral Force-Reflecting
Control of Manipulators, +38 +0 +i Proceedings Of Fourth CISM-IFTOMM+1
, Sep. 8-12, 1981.

McAfee et al., +37 Teleoperator Subsystem/Telerobot Demonstrator:

Force Reflecting Hand Controller Equipment Manual, +38 +0 +i JPL+l +0

1988, JPL D-5172.

Minsky, +37 Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display, +38 +0 +i Ph.D.

Group ID: H
User ID: Rxbhavs

Dissertation+l , MIT, Jun. 1995, archived Jul. 6, 1995.

Jacobsen et al., +37 High Performance, Dextrous Telerobotic

Manipulator With Force Reflection, +38 +0 +i Intervention/ROV +3 91

Conference & Exposition+l , Hollywood, Florida, May 21-23, 1991.

Shimoga, +37 Finger Force and Touch Feedback Issues in Dexterous
Telemanipulation, +38 +0 +i Proceedings of Fourth Annual Conference on
Intelligent Robotic Systems for Space Exploration+1, Rensselaer
Polytechnic Institute, Sep. 30-Oct. 1, 1992.

IBM Technical Disclosure Bulletin, +37 Mouse Ball-Actuating Device With Force and Tactile Feedback, +38 +0 vol. 32, No. 9B, Feb. 1990.

Terry et al., +37 Tactile Feedback In A Computer Mouse, +38 +0 +i

Proceedings of Fourteenth Annual Northeast Bioengineering Conference,

University of New Hampshire+l , Mar. 10-11, 1988.

Howe, +37 A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation, +38 +0 +i Proceedings of the 1992 IEEE International Conference on Roboitcs and Automation+1, Nice, France, May 1992.

Eberhardt et al., +37 OMAR+13 A Haptic display for speech perception by deaf and deaf-blind individuals, +38 +0 +i IEEE Virtual Reality

Annual International Symposium+1 , Seattle, WA, Sep. 18-22, 1993.

REFERENCES (Page 6) SERIAL NUMBER: 09/756,617 FORM 1449

p ID: H Page 11

Pat. No. 05975341 - 8 Issue Date: 07/05/04 Group ID: H
User ID: Rxbhavs

U.S. REFERENCES

U.S. Pat No. Date Patentee

Class

FOREIGN REFERENCES

Foreign Doc No. Date Country Class SubClass

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Rabinowitz et al., +37 Multidimensional tactile displays:

Identification of vibratory intensity, frequency, and contractor

area,+38 +0 +i Journal of The Acoustical Society of America+l , vol.

82, No. 4, Oct. 1987.

Bejczy et al., +37 Kinesthetic Coupling Between Operator and Remote Manipulator, +38 +0 +i International Computer Technology Conference, The American Society of Mechancial Engineers+l , San Francisco, CA, Aug. 12-15, 1980.

Bejczy et al., +37 A Laboratory Breadboard System For Dual-Arm
Teleoperation, +38 +0 +i SOAR +3 89 Workshop, JSC+l, Houston, TX, Jul.
25-27, 1989.

Ouhyoung et al., +37 A Low-Cost Force Feedback Joystick and Its Use in PC Video Games, +38 +0 +i IEEE Transactions on Consumer Electronics+l, vol. 41, No. 3, Aug. 1995.

Marcus, +37 Touch Feedback in Surgery, +38 +0 +i Proceedings of Virtual Reality and Medicine The Cutting Edge+l , Sep. 8-11, 1994.

Bejczy, et al., +37 Universal Computer Control System (UCCS) For Space Telerobots, +38 +0 CH2413-3/87/0000/0318501.00 1987 IEEE, 1987.

Group ID: H User ID: Rxbhavs

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